What is the impact of the SEA projects?

The project results are widely disseminated. Executive Summaries of recent projects have been read by or briefed to the **CNO** and the **Defense Science Board**, among many others. The student work had a great visibility and an **impact on major policy discussions**.

Students who lead and participate in the campus-wide projects leave NPS with an unparalleled grasp of the technical, strategic, and tactical issues surrounding an important Navy problem.

Who can I contact for more information?

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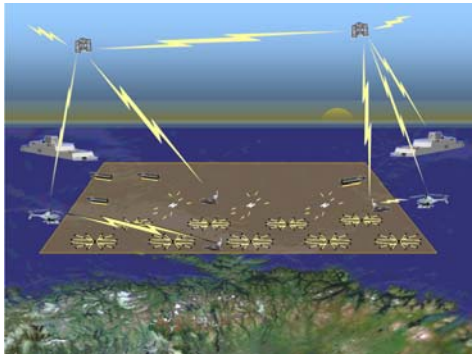
How do I get orders?

To start, tell your detailer you want to study SEA (curriculum 308) at NPS!

"Bringing the technical to the tactical"

Systems Engineering and Analysis (SEA)

[The Warfighter's Curriculum]



Curriculum Brochure

Naval Postgraduate School
Monterey, California

The best curriculum in the world for learning HOW to engineer, to lead, and to manage military transformation.

Version: 12/05/2005

Some Frequently Asked Questions:

When do students start?

Students start in January and July of each year, and graduate 18 months later in the following June or December.

Who is the primary audience?

Naval officers from the **unrestricted line** are the primary student audience. Since the projects tend to look at broad naval issues, officers from all communities are welcome, but especially the **surface**, **aviation**, and **subsurface** communities.

Do I write a thesis?

You must either complete an individual thesis or you must contribute significantly to a group project report.

Will this curriculum help me in my future Naval career?

Yes!

If you anticipate a role in the transformation of the US military, this is the curriculum for you.

If you are an **unrestricted line officer**, this curriculum provides a robust **blend of technical and war-fighting** education.

This education will make you a better **department head**, a better staff officer, and ultimately, a **better commander.**

What is Systems Engineering and Analysis (SEA)?

Systems Engineering applies the engineering thought process to the design and development of large, complex systems. Systems engineers analyze the **need** for a system, determine its **operational concept**, develop functional requirements, produce the system **architecture**, allocate the requirements among sub-systems, **manage the design** of the sub-systems, assure that the final design is integrated, **assess any trade-offs** made, and then implement and test the solution.

Systems Analysis examines existing systems to better understand them. This understanding is then used to determine and **choose** between alternatives for system improvement and employment. Students learn and apply modeling, optimization, simulation, and **decision making** under risk and uncertainty. **Systems Analysis provides key insights for improved operation of existing complex defense systems**.

Is SEA useful for a warfighter?

Absolutely! SEA is designed for the warfighter! Skills learned in this degree program will deepen your understanding of how the **Navy builds and fights large systems**. We also include courses that complete your **phase one of JPME.**

What skills would I develop in these degree programs?

Topics of study include contextual matter (sensors, weapons, information systems, networks, C4I), and techniques (combat simulation, modeling, optimization, project management, fundamentals of systems engineering). Each year, there is a campus wide systems engineering project, and the SEA students manage it.

What can I expect?

Six quarters (1.5 years) of academic challenges with direct application to current problems of interest to DoD and the Navy.

What are some examples of the projects that SEA students work on?

In 2002, 2003, and 2004, SEA students designed a concept and force for **expeditionary warfare**. The project began with an **analysis** of the status quo. Then starting from a clean sheet of paper, we began to design to meet requirements. These designs included the **operational concepts**, the **ships,** the **aircraft**, the ground vehicles, the **logistical system**, the **command and control system**, as well as many other subsystems.

What was this year's SEA project?

In 2005 two projects were completed. The first was submitted in June and involved the design and analysis of several architectures containing a mix of manned and unmanned vehicles employed in maritime domain protection and counter-terrorism. The most recent project, completed in December, was titled Littoral Undersea Warfare in 2025. This study designed and analyzed several architectures including current and future systems and programs of record in order to design systems that deny enemy undersea forces effective employment against friendly forces within the littorals. Links to the project briefings and executive summaries can be found at the program web site at http://www.nps.navy.mil/SEA

Are there any prerequisites to get into the program?

A basic math and science background as evidenced by past academic achievements. You must have an undergraduate degree with a GPA of 2.2 or better, and have taken a calculus and calculus-based physics sequence with grades of C or better. (The Academic Profile Code is 334).

How is life in Monterey?

Fabulous. There is good military housing, good schools, great weather, and world-class recreational activities.